

**MATHEMATICS 2300  
HONORS SECTION  
FALL 2012  
CALCULUS 2**

**Instructor:**

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Weekdays 9:00-9:50 am, ECCR 118.

<http://math.colorado.edu/~kstange/2300-Fall12012>

**It is your responsibility to notice online announcements.** Make it a part of your morning procrastination routine (there will be RSS).

GOALS AND PREREQUISITES

The goal of this course is not just to memorize recipes for a list of problem types. On the contrary, recipes are quickly forgotten and can be found online anyway. The internet can integrate anything you can integrate, faster.

Instead we will emphasize the concepts of calculus, the ability to follow and communicate mathematical argument, and the creative use of known mathematical tools to solve novel problems. (This still involves learning to integrate by hand.) These are the skills that are actually applicable to real life.

This is an honors section. That means we will expect more from students than in a regular section. You will be expected not only to master ‘standard calculus’ problems, but to deal with novel situations, to understand and explain core concepts, and to understand some proofs (horror!).

As a prerequisite, you should be comfortable with the material of Calculus 1. It is also important to have a user’s understanding of computers and the internet, as both of these will be used as tools for the course. Mathematical study techniques will be covered.

COURSE SCHEDULE

Each week will have the following shape:

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*Date:* Last revised: August 21, 2012.

Monday	9:00 am: Lecture 11:59 pm: Webwork due
Tuesday	9:00 am: In-Class Quiz 9:20 am: Lecture
Wednesday	9:00 am: Lecture
Thursday	9:00 am: Written Homework due 9:00 am: Tutorial Project
Friday	9:00 am: Lecture

In addition, there are three important dates:

<b>First Midterm</b>	Wednesday, October 3rd, 5:15 - 6:45 pm
<b>Second Midterm</b>	Wednesday, November 7th, 5:15 - 6:45 pm
<b>Final Exam</b>	Wednesday, December 19th, 10:30 am - 1 pm

**Textbook.** Hughes-Hallett, Gleason, McCallum et al., *Calculus*, 5th ed.

**Calculator.** No.

#### INTERACTING WITH THE COURSE

**Virtual Office Hours:** You may email math and course questions to  
[kstange@math.colorado.edu](mailto:kstange@math.colorado.edu).

Questions of interest to your classmates will be anonymized and answered by the instructor on the website, for the benefit of all students, unless you request otherwise.

#### Instructor's Office Hours:

- **Regular Office Hours:** These will be set according to *your* schedule. Guaranteed and preferred gold club points eligible.
- **Your Very Own Office Hours:** You can always make a private appointment. This is best for personal matters; I will do my utmost to make regular office hours fit your schedule.

**Teaching Assistant's Help Lab Hours:** TBA

**Discussion Boards.** The course does not have an discussion board per se, but you can use the comments section on the page "Discussion" on the Virtual Office Hours blog to post comments on any relevant topic. If there is demand for something more formal, we can set something up.

**Study Groups.** Please take a moment now, while reading this syllabus, to get the names and contact info of the people nearest you in the class. It will be to your advantage to locate those in your dorm and hold study sessions.

Name	Contact Info
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.....	.....
.....	.....
.....	.....

GRADING

The grading breakdown will be as follows:

Final Exam	26
Best Midterm	18
Worst Midterm	9
Written Homework (best 12 of 14 assignments)	15
Webwork Homework (best 12 of 14 assignments)	15
In-class Quizzes (best 12 of 14 quizzes)	10
Tutorial Projects (best 13 of 15 tutorials)	7

FINAL EXAM

**Wednesday, December 19th, 10:30 am - 1 pm.**

The final exam will be cumulative. It will be designed to take two hours to complete, but you will be given 2.5 hours to write it.

THE TWO MIDTERMS

**5:15pm - 6:45pm, Wednesdays  
October 3rd and November 7th**

They will each be designed to take one hour to complete, but you will be given one hour and a half to write them. They will each be cumulative with a strong emphasis on the material since the last midterm. Your worst midterm will count only half the amount of the best one.

WRITTEN HOMEWORK ASSIGNMENTS

**Due Thursdays at the beginning of tutorial**

The written homework will cover the material of the past Monday-Friday. It will be assigned continuously during the semester, but no new problems will be added to a Thursday assignment after the Friday previous (11:59 pm). This means you can (and should) start as soon as some problems appear on the website, but it is your responsibility to check again on the weekend to see if any “last-minute” problems have been added to the homework set, most likely dealing with Friday’s lecture material.

Homework will be returned, and solutions posted, by the Monday after it is due (in case of a Monday holiday, by Friday after it is due).

#### WEBWORK HOMEWORK ASSIGNMENTS

##### **Due Mondays at 11:59 pm.**

The WebWork system is an online homework system. It has the advantage that you get immediate feedback, but the disadvantage that you do not get graded by a human being on your ability to explain mathematics in written form. These assignments will tend to be more computational, faster and easier than the written problems. Details on signing up for the system are available on the course website.

Homework will be assigned continuously, but nothing due Monday will be assigned later than Friday 11:59 pm. It is your responsibility to check frequently at Webwork and notice new problem sets. Each problem allows several attempts; it is to your advantage to start early and identify your problem spots while you still have time to seek help and attempt the problem again.

#### IN-CLASS QUIZZES

##### **Tuesdays at the beginning of class, approx. 20 minutes**

The quiz each week will have two parts, usually each consisting of a single problem:

- (1) The first part will be drawn from the homework which was handed back yesterday (Monday), which covered material from two weeks previous. This will be a problem, or part of a problem, from that homework set, verbatim or nearly so.
- (2) The second part will be drawn from yesterday's webwork, verbatim or nearly so.

What does 'nearly verbatim' actually mean? Often it will be modified a little, so that it is not helpful to memorize numerical answers. It is not my intention to trick you with a similar-looking problem with a vastly different solution.

The quiz is a study tool. Its goals are: (a) to encourage you to compare your returned homework to the posted solutions and learn from your mistakes, (b) to keep material fresh in mind for more than one week at a time, and (c) to discourage you from completing homework in any other way than internalised understanding.

#### TUTORIAL PROJECTS

##### **Thursdays in class**

On Thursdays, the Teaching Assistant will lead group projects. These may cover new material, and the tutorial projects are part of the course lecture notes.

The group to which you are assigned will change frequently. The TA is there to help, but the goal is for you to work through these projects on your own. Your success with the projects is evaluated, as a group, during class. Solutions will be posted online.

### SYLLABUS

We will cover Chapters 7-10 of the text, as well as parts of Chapters 11, 12, 14, and 16. We will cover Chapters 7 and 8 in an interleaved, or concurrent, manner. Some sections may be omitted. In general, you should expect to be guided by lecture notes and use the textbook primarily as a resource.

### LECTURE

It is crucial that you attend lecture. You will be tested on the lecture notes, not just the textbook. I will both reorder and supplement the material in the text, so you cannot attend other sections of 2300 in lieu of this one. If you cannot attend a class for any reason, please obtain lecture notes from another student, study them, and come to me with specific questions (if you just ask ‘what did I miss?’ I will just answer ‘a lecture!’).

### SOURCES OF HELP

The course website has links to resources, including internet resources and information about the Undergraduate Mathematics Resource Center (aka “Help Lab”), which is open Monday–Thursday, 9 am - 5 pm, and Friday, 9 am - 2 pm.

It’s possible you suffer from math anxiety. Although fear of math is like fear of chocolate, even mathematicians can suffer from it! Please come talk to me.

### COURSE POLICY ON HOMEWORK HELP

You are encouraged to seek help through all the means available to you: instructors, resource center, internet, tutors, etc. The internet *can* do your homework for you, especially the computational parts. However, it is your responsibility to seek only those means of help through which you *learn*. Specifically, when you write your solutions, **you must write them alone, in your own words, using your textbook and course notes if necessary, not copying from other notes, websites, friends, or any other source.** This means you can work on problems with your friends, your tutor, or your dog, but you must not copy answers during the discussion; instead, you must write in your own words, afresh from your own newly improved brain, *after* the discussing and working has been done. This is course policy, but it is also common sense study habits. Failure to follow this policy may result in a grade of zero.

## SPECIAL REQUESTS

I am happy to accommodate disabilities or religious observances, or a request that I address you with a different name or pronoun than my roster indicates. Please contact me as soon as possible.

## MISSED OR LATE WORK:

... receives a zero. For homework, quizzes and projects, the two lowest scores are automatically dropped; this should cover any unexpected illnesses or other legitimate reasons to miss work. A missed midterm will count as zero.

If you have a religious exception or other legitimate reason to reschedule a midterm, please make arrangements with me **as soon as possible**.

If you missed a midterm without permission, you must supply a note specifically excusing your absence (i.e. ‘Jane Doe *could not* attend the midterm because she swallowed a cat / was abducted by militant Pastafarians’) from a doctor or the Office of the Dean of Students. In that case, and only in that case, appropriate grading adjustments will be made.

## UNIVERSITY POLICIES

Please see the course website for University Policies concerning such matters as religious holidays, the Honour Code, harassment, etc.